

CLAIMS

1. A drilling mud diverter for use in horizontal drilling with drill pipe and drilling mud, the mud diverter comprising:
 - a diverter unit having:
 - a cylindrical core with opposite ends;
 - a first end cap connected to one end of the cylindrical core and a second end cap connected to the other end of the cylindrical core, wherein the first end cap and second end cap each have a guide element for guiding a drill pipe through the end caps and cylindrical core;
 - a pressure relief bypass assembly having a bypass through the end caps and cylindrical core that passes pressurized drilling mud through the diverter unit; and,
 - an annular expandable bladder on the cylindrical core between the end caps.
2. The drilling mud diverter of claim 1 having a pressurized air supply to the expandable bladder for expanding the bladder.
3. The drilling mud diverter of claim 2 wherein the diameter of the end caps is greater than the diameter of the cylindrical core.
4. The drilling mud diverter of claim 3 wherein the expandable bladder when deflated on the cylindrical core has an outer diameter substantially equal to the

diameter of the end caps.

5. The drilling mud diverter of claim 1 wherein the bypass assembly has a bypass pipe through the diverter unit forming the bypass passage.

6. The drilling mud diverter of claim 1 wherein the bypass assembly has a pressure relief valve that passes pressurized drilling mud through the diverter unit at a selected pressure.

7. The drilling mud diverter of claim 1 wherein the bypass assembly has a bypass pipe through the diverter unit connected to a conduit having a pressure relief valve for passing pressurized drilling mud through the diverter unit at a specified pressure.

8. The drilling mud diverter of claim 1 further comprising a swivel assembly connected to one of the guide elements.

9. The drilling mud diverter of claim 1 further comprising a swivel unit connected to the diverter unit, the swivel unit having a swivel assembly and a seal assembly.

10. The drilling mud diverter of claim 9 wherein the swivel assembly is connected to one of the guide elements of the diverter unit.

11. In a horizontal drilling operation with drill pipe, the method of diverting drilling muds to one of two entry portals of a drilled bore using a mud diverter having an inflatable bladder comprising the steps of:

connecting the mud diverter to drill pipe at one of the entry portals of the drilled bore;

displacing the drill pipe in the drilled bore with the mud diverter connected to the drill pipe;

transporting the mud diverter through the entry portal into the enlarged bore;

positioning the diverter at a desired location in the enlarged bore;

expanding the inflatable bladder of the diverter in the bore to fix the position of the diverter at a desired location in the bore;

releasing the coupled diverter from the drill pipe;

blocking the drilling mud from passing to the entry portal through which the diverter was transported; and,

continuing the displacement of the drill pipe to continue enlarging the bore.

12. The method of claim 11 wherein the step of enlarging at least a part of the drilled bore to accommodate the mud diverter occurs after the step of connecting the mud diverter to the drill pipe.

13. The method of claim 11 wherein the diverter has a bypass passage through the diverter with a pressure release to block drilling mud from passing through

the bypass unless a set pressure has been exceeded.

14. The method of claim 12, including the step of setting the pressure release with a specified pressure before continuing the displacement of the drill pipe to continue enlarging the bore.

15. The method of claim 11 including the step of anchoring the mud diverter to prevent displacement of the diverter before continuing the displacement of the drill pipe to continue enlarging the bore.

16. The method of claim 11 wherein the diverter includes a pressure tracking unit that measures the pressure of drilling mud blocked by the diverter.

17. The method of claim 16 including the step of tracking the pressure of the drilling mud after continuing the displacement of the drill pipe to continue enlarging the bore.

18. The method of claim 11 including the step of withdrawing the diverter after the bore has been enlarged.

19. The method of claim 18 wherein the diverter is connected to the drill pipe after the bore has been enlarged and the diverter is withdrawn by the step of displacing the drill pipe.

20. The method of claim 18 wherein the diverter is connected to cables and the diverter is withdrawn by the cables after the bore has been enlarged.